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30 March 1972

COMIREX MAPPING, CHARTING AND GEODESY WORKING GROUP

Minutes of Meeting Held in Room 2D921

Pentagon

0930 - 1330 Hours, 16 March 1972

NASA Review Completed.

NRO review(s) completed.

PRESIDING

Chairman

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and

Deputy Chairman

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DIA REVIEW COMPLETED

ILLEGIB

DOJ Review
Completed.

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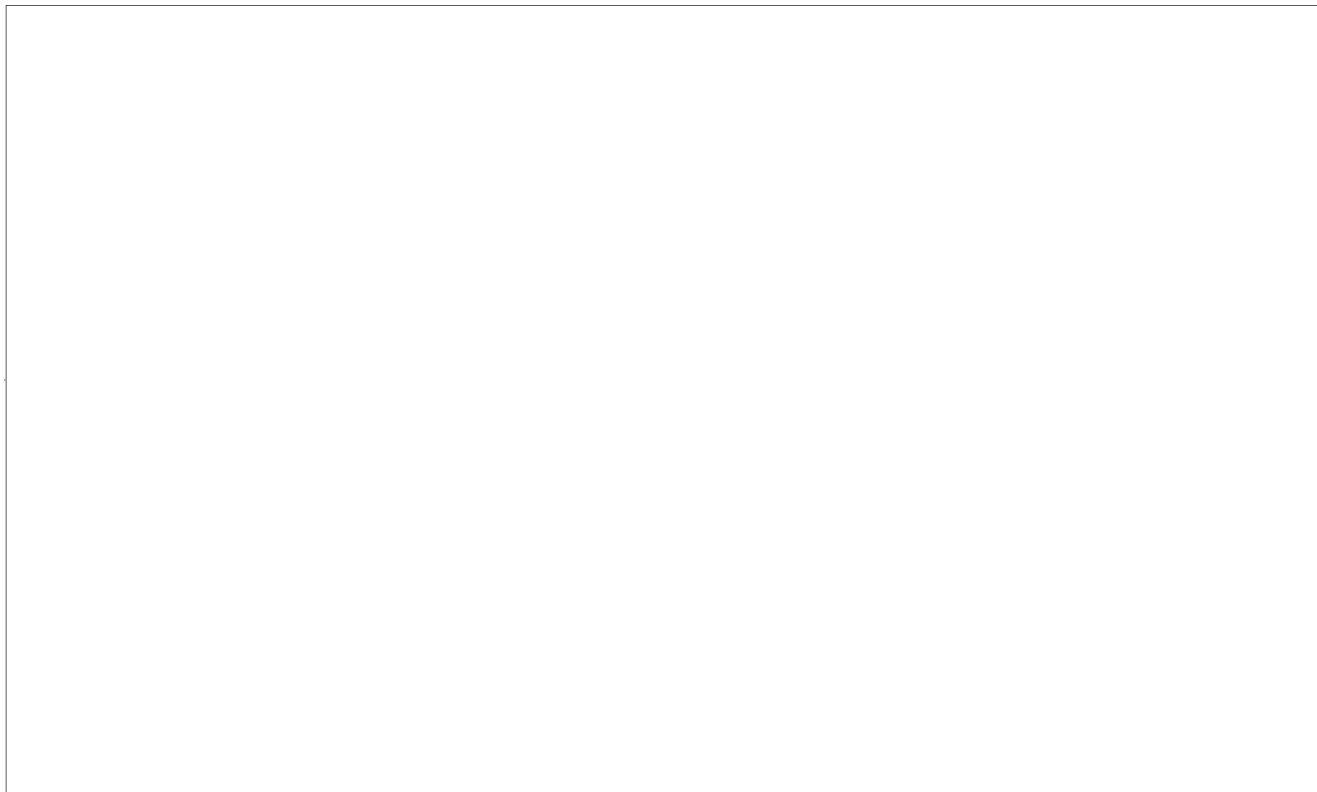
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However, the perigee could be set for intelligence targets. He is currently running a program to optimize for tropical belt coverage. He will present his selected orbit to ICRS on Tuesday 21 March. By Friday 24 March, the decision should be firm. The plan for 1117 is to launch 30 days after 1116 as though it were the next bucket for 1116.

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8. ☐ SKYLAB

a. Mr. Fred Doyle, USGS, briefed the Working Group on the optical sensors which will be included as part of the earth observation program established for the SKYLAB A satellite system. Two separate camera systems will be aboard the spacecraft. The S-190A system is a multi-spectral camera array of six cameras of six-inch focal length. The S-190B system is an 18-inch focal length frame camera. Characteristics of the two camera systems are given below:

(1) S-190A Multi-Spectral Camera System

No of Lenses	-	6	
Focal Length	-	six inch, f/2.8	
Manufacturer	-	<input type="checkbox"/>	25X1
Film Size	-	70 mm.	
Film Supply	-	78 cassettes, with 400 frames per cassette	25X1
Format Size	-	2 1/4 X 2 1/4 inch	25X1

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Ground Coverage	-	88 X 88 NM per frame
Ground Resolution (static)	-	40 - 100 M depending on film type
FMC	-	Included
Exposure Rate	-	one every 2-20 sec

<u>Spectral Band</u>	<u>Film Type</u>	<u>Dynamic Resolution</u>
.5 - .6 microns	B&W	191'
.6 - .7	B&W	184'
.7 - .8	IR B&W	450'
.8 - .9	IR B&W	450'
.5 - .88	Color IR	450'
.4 - .7	High Res Color	210'

(2) S-190B Earth Terrain Camera

No. of Lenses	-	1
Focal Length	-	18 inches
Manufacturer	-	
Film Size	-	5 inches
Film Supply	-	16 rolls, 200' per roll
Format Size	-	4.5 X 4.5 inches
Ground Resolution	-	10-40 M depending on film type
FMC	-	Included

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b. The two camera systems will operate on 45-60 orbits during the periods of occupancy of the spacecraft. 192 test areas have been identified for the S-190A system and 37 areas have been identified for the S-190B system.

c. During the discussion following Mr. Doyle's briefing, the following points were made:

(1) [] stated that approval was being given for unclassified operation of systems with resolution down to 5 m - 10 m on a case by case basis.

(2) [] stated that this was not a change to the general policy of limiting resolution to 60 feet. He said the COMIREX would review appropriateness of test sites and review the photography upon return. A special committee will review the political implications of mission coverage prior to each launch.

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(3) Mr. Kreuger of NASA stated that the 24-inch Apollo panoramic cameras have been approved for earth orbit use if the Apollo missions do not go to the moon. Mr. Kreuger also informed the group that NASA was not entering into restrictive bi-lateral agreements with other countries on release of NASA earth orbit photography and that the photography will be releasable to anyone.

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(4) Mr. Doyle stated that use of a 12-inch frame camera in conjunction with the 24-inch pan cameras has been approved for post-Apollo missions. However, funding has not been approved for this program. Mr. Doyle also stated that USGS has requested that [redacted] photography be declassified. Mr. Kreuger offered SKYLAB descriptive data for use of all MCGWG members.

(5) The Chairman thanked Mr. Doyle for his briefing and Mr. Kreuger for his comments.

9. [redacted] Briefing

[redacted] stated that NRO development programs are conducted by SAFSP on the West Coast. Developments of interest to the MC&G community were primarily under the cognizance of [redacted] prior to his reassignment. At present, programs of interest to MC are split up among a number of different project officers. [redacted] indicated that MC&G interests would be better served if arrangements could be made for an individual with an MC&G background to be assigned to the West Coast to coordinate these programs. In discussion it developed that another approach the MC&G community should consider is MC&G funding for some of these development efforts, at least through the concept definition stages. These could be contracted through their own facilities or the NRO. [redacted] then briefed on four efforts he considers to be primarily of an MC&G nature.

a. Evaluation of the suitability of systems for positioning purposes- this effort is being carried out under contract to [redacted]. It involves upgrading the quality of the BAR XC test range through the utilization of U-2 photography, and subsequent evaluation of KH-4 [redacted] positioning ability. This program has been delayed by transfer of the U-2 aircraft containing two mapping cameras to the Rome Air Development Command. It should be back underway in early April.

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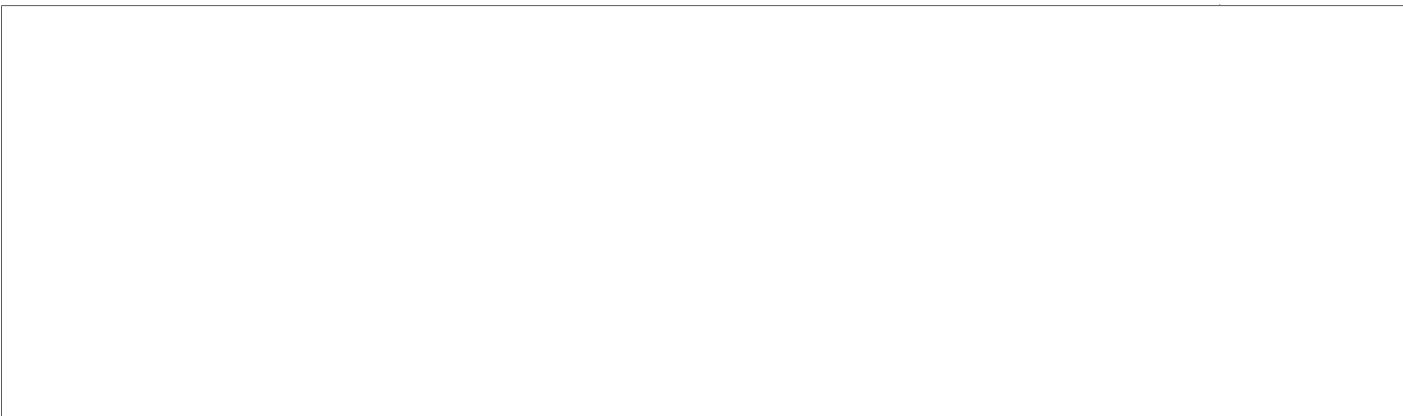
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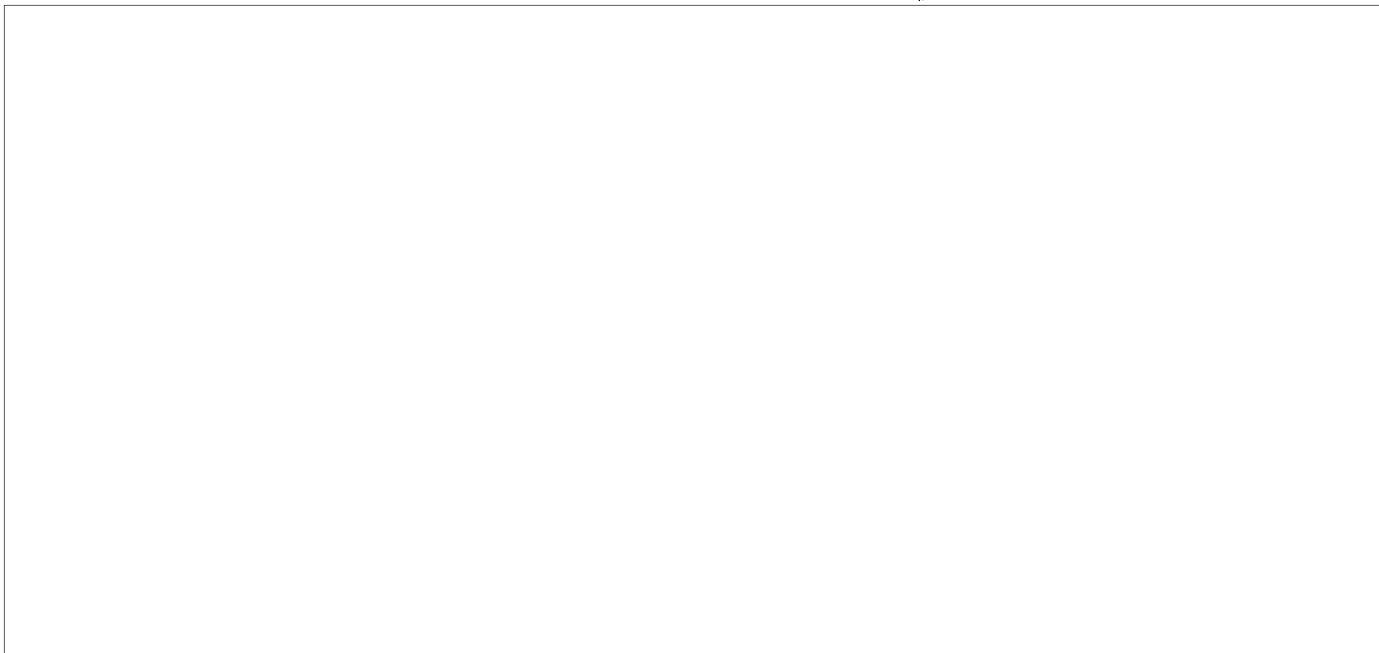
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In addition to the lens design problem, the contractor is investigating other aspects of the system configuration which would require redesign. Some of these factors are the lens barrel casting, shutter design, changeable filters and Forward Motion Compensation (FMC) improvements. This contractor effort will be completed in the Fall of 1972 and more reliable performance predictions will be available at that time. [redacted] felt that the implementation of the hardware phase of this program will require considerable justification by the MC&G community. 25X1

c. Artificial stellar field for camera calibration - a device has been developed for use in providing camera calibration for distortion. This device, which could take the place of stellar exposures, consists of ruled gratings with coherent light used as the illumination source. A model large enough for use with [redacted] will be fabricated and tested. 25X1
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At the conclusion of the lens design effort, lens and camera fabrication problems will be investigated. [] estimated it will take 5 years to develop an operational system if the program is pursued. The MC&G community will have to examine its needs in that time frame. NRO has contracted [] to examine the MC&G applications of the toroidal lens capabilities. [] expressed concern that a contractor had been given a task which could probably be done by the mapping agencies themselves or at least have prepared the work statement. He felt that the results should be reviewed by the MC&G community before acceptance by the NRO.

e. During the discussion following [] briefing, a need was expressed for periodic briefings such as the one just given and the advisability of the MC&G technical staff to work closely with the NRO in order that technical advances be exploited in a timely manner. This will also assure that MC&G data reduction planning will keep pace with new acquisition systems.

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1 Enclosure a/s

Chairman
COMIREX MC&G Working Group

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